

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 63-090833

(43)Date of publication of application : 21.04.1988

(51)Int.Cl.

H01L 21/365

(21)Application number : 61-236533

(71)Applicant : NEC CORP

(22)Date of filing : 03.10.1986

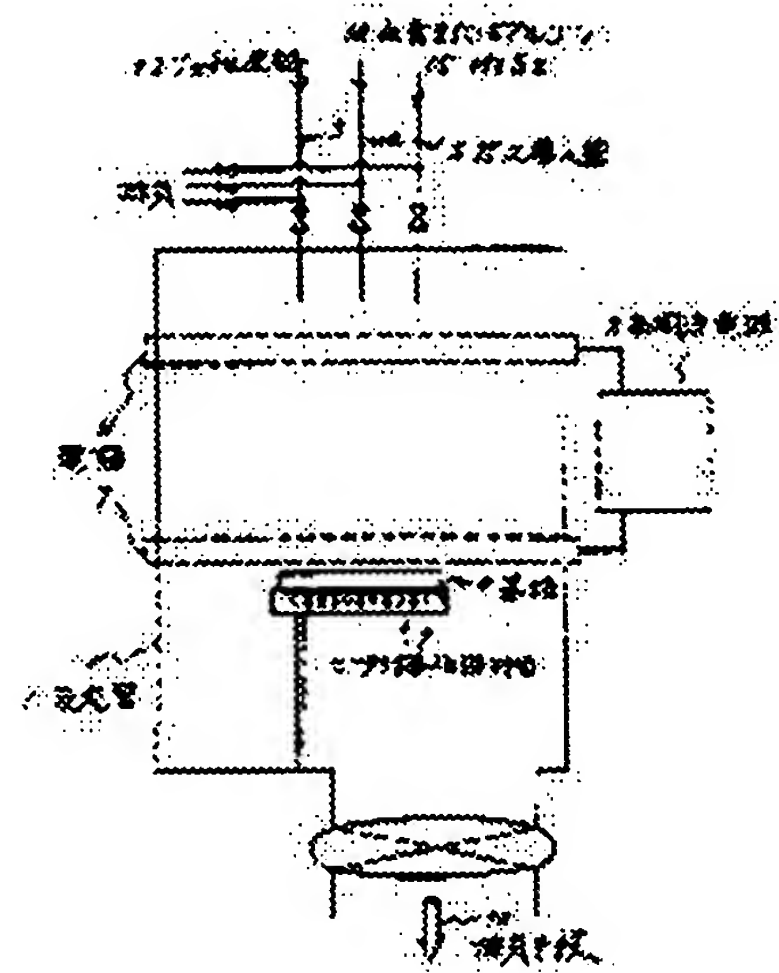
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## (54) MANUFACTURE OF COMPOUND THIN FILM OF GROUP II AND VI ELEMENTS

### (57)Abstract:

**PURPOSE:** To obtain a thin film of high quality at lower temperature than a conventional one at a high growing velocity thereby to be able to largely reduce a growing time by a gas source ALE method by using one or more types of H<sub>2</sub>S<sub>2</sub>, H<sub>2</sub>S<sub>3</sub>, H<sub>2</sub>S<sub>4</sub> as compound gas containing group VI element.

**CONSTITUTION:** When one or more types of compound gas containing group II element and one or more types of compound gas containing group VI element are simultaneously or alternately introduced onto a substrate to form a thin compound film made of the group II and VI elements, one or more of H<sub>2</sub>S<sub>2</sub>, H<sub>2</sub>S<sub>3</sub>, H<sub>2</sub>S<sub>4</sub> are used as compound gas containing group VI element. For example, zinc diethyl 13 is used as the group II source, H<sub>2</sub>S<sub>2</sub> 15 is used as group VI source, and a ZnS film is formed by a gas source ALE method on a crystalline substrate 9 of GaAs or Si or an amorphous substrate made of glass. Since H<sub>2</sub>S<sub>2</sub>, H<sub>2</sub>S<sub>3</sub>, H<sub>2</sub>S<sub>4</sub> called 'hydrogen polysulfide' feasibly radiate sulfur by heating or light irradiating, they are used as sulfur supply gas source to obtain a thin film of high quality at lower temperature than a conventional one at a high growing velocity.



## LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

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